

Automated Red Blood Cell Exchange Transfusion for patients with Sickle Cell Disease

This leaflet explains more about Automated Red Blood Cell Exchange Transfusions. If you have any further questions, please speak to a doctor or nurse caring for you.

What is an automated red cell exchange?

An automated red cell exchange transfusion (often called exchange transfusion for short) is a type of blood transfusion often used in patients with sickle cell disease.

Using a device called a cell separator, which is sometimes referred to as an apheresis machine, we can exchange or swap your own blood cells with donor red blood cells that do not contain the sickle haemoglobin. We aim to exchange approximately 70% of your cells during the procedure. For a few weeks following a procedure most of the blood cells in your body will not be sickle red blood cells. This means the complications from sickle cell disease will be reduced during this time.

Why do I need an exchange transfusion?

Your doctor or specialist nurse will speak to you about why an exchange transfusion is recommended and answer your questions. Sometimes we recommend just a single procedure. This might be to help to prepare you for an operation or if you are very unwell due to your sickle cell disease.

For some people we recommend regular exchange transfusions (a programme) which means having a procedure every four to eight weeks. This might be for a short length of time, for example when you are pregnant, or to help leg ulcers heal or we may recommend a long-term exchange transfusion programme because of continuing problems with your sickle cell disease or to prevent certain complications such as a stroke or chest crisis.

In sickle cell disease we usually recommend exchange transfusions rather than a conventional 'top up' transfusion. Exchange transfusions are more efficient in that they will be more likely to give you a lower level of sickle blood cells in your system (often referred to as a lower HbS%). You will need fewer procedures each year as you can go longer between transfusions and there is less risk of iron overload because when the blood cells are exchanged the iron in the blood is exchanged too. For some patients who already have iron overload we may also be able to reduce the amount of iron by removing some during the procedure (called red cell depletion). Exchange transfusions are also faster and the whole procedure can usually be completed within three hours.

What are the side effects or risks of exchange transfusions?

Most people tolerate their exchange transfusions well but there are a few side effects of which to be aware:

- The risks of blood transfusion. These are the same as for any blood transfusion and these include transfusion reactions and the very unlikely event of transmitted infections. Before your first exchange you will go through all the risks and benefits of the procedure with either one of your doctors or your nurse and will be asked to sign a consent form. We will also offer you information leaflets on blood transfusion.

We also have a patient information leaflet available covering blood transfusions for patients with sickle cell disease ([Sickle cell transfusion - Hospitals and Science - NHSBT](#)).

- Reduced calcium levels. During the procedure a blood thinner is used to stop the blood clotting and this can reduce the calcium levels in your blood. Occasionally this may cause a pins and needles like sensation in your fingertips or lips or for you to feel slightly sick. If that happens we can give you an infusion of calcium to stop these feelings.
- Feeling faint or light headed. Your blood pressure will be monitored during the procedure. However some people do feel a bit lightheaded at the end especially if they get up too quickly. Please let the nurses know straight away if you feel unwell. Some people occasionally need a drip of extra fluid to feel better.

Where does the exchange transfusion happen?

Planned exchange transfusions happen on the apheresis unit on Gordon-Smith Ward, 3rd floor Lanesborough Wing at St George's Hospital.

If you are having an exchange transfusion as an inpatient because you are very unwell, this may happen on the ward to which you are admitted.

What happens before the transfusion or on the day?

First Exchange Transfusion

- Before your first exchange transfusion your doctor or nurse will discuss the process with you and answer your questions.

You will be asked to sign a consent form to document this discussion with you.

- Before your first exchange transfusion you will meet with the apheresis team on the unit. This will give you the opportunity to meet the team if you haven't met them before, to have your base line blood tests taken, your height and weight measured (so we can calculate volume of blood required) and the nurses will review your veins to ensure they know what sort of intravenous access they will need to do the procedure.
- You will be given the contact details of the apheresis team and unit so you know how to contact them

Before each exchange transfusion

- Two to three days before your transfusion you will be asked to attend our phlebotomy department or our apheresis unit to have your bloods taken including a cross match. This is important as this is how we order in and match the blood to be used for your transfusion. If you do not have this blood test taken in good time then we will not be able to do your exchange transfusion. The apheresis nurses will give you the labels and forms for your next blood test at the end of each exchange transfusion.

On the day of the exchange transfusion

- Please arrive at your appointment time promptly. Due to the pressure on the service our appointment slots are nearly all fully booked and so if you are more than 30 minutes late we will not be able to do your exchange transfusion that day. We will need to reschedule your appointment.

- To be able to remove your blood cells and give you the transfused blood access to your veins is required. In most patients we can use two cannulae (or drips) in your arms; one to remove the blood and one to transfuse inwards. The apheresis nurses may use ultrasound to locate the best veins for the procedure. Occasionally it may be necessary to have a long line inserted into one of the bigger veins in your groin. If this is needed it will be explained to you beforehand.
- The nurses will set up the blood and the machine. They will talk you through it and answer any questions you might have.
- You will have observations such as blood pressure, heart rate and oxygen levels taken during the procedure.
- At the end of the procedure a blood sample will be taken to check that the target goals in terms of percentage of sickle cells are met. You may be given fluid through your existing venous access if required before it is removed.
- You may bring someone with you for company however, due to the limited space, we can only accommodate up to two companions inside the apheresis unit. We ask that you refrain from bringing infants or children to the unit to ensure that the nurses will only focus on your treatment. In certain circumstances and with prior discussion with the apheresis team, it may be permitted to bring children, provided there is someone to look after them whilst you are having your procedure.
- Sandwiches, biscuits and hot drinks are provided during your treatment. You can eat and drink whilst having your treatment if it doesn't interfere with the delivery of your treatment. Please ask the nurse looking after you if you need assistance.
- There is free WiFi available. Please ask any member of the apheresis team if you require assistance to register.

- At the end of the exchange transfusion, if you need another procedure you will be given the appointment date and time and the blood stickers for your next blood test.

Unfortunately, due to the high demand for this service, if you miss your exchange transfusion without letting the team know we may not be able to rearrange it. In this case you would need to come to clinic to discuss with the nurse or doctors the reason for you not attending so that we can help you to attend your exchange transfusions.

What do I need to bring with me?

Please bring any prescribed medications that you would need to take during the time you will be at the hospital. This includes any pain medications that you usually take. If possible, wear clothing with loose-fitting sleeves as the apheresis nurses will require to expose your upper arm for cannulation.

Contact us

Apheresis Unit: 020 8725 0612 (Zhinan Li, Apheresis Manager)

Dr Elizabeth Rhodes (Sickle cell and thalassaemia consultant):

Tel: 020 8725 0885

Dr Julia Sikorska (Lead sickle cell and thalassaemia consultant)

Tel: 020 8725 0885

Dr James Masters (sickle cell and thalassaemia consultant)

Tel: 020 8725 0885

EnaAbena Akomah-Barnier (clinical nurse specialist)

Tel: 07825 978812

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Nazik Osei (clinical nurse specialist)

Tel: 07825 978812

Email: haemoglobinopathy.nurses@stgeorges.nhs.uk

Sickle cell and thalassaemia secretary Tel: 020 8725 0885

Useful sources of information

Sickle Cell Society

Tel: 020 8861 7795

Website:

[Sickle Cell Society - Supporting People Affected by Sickle Cell Disorder](#)

NHS Blood and Transplant:

[Sickle cell transfusion - Hospitals and Science - NHSBT](#)

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit

www.stgeorges.nhs.uk

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you advice and information when you have comments or concerns about our services or care. You can contact the PALS team on the advisory telephone line Monday, Tuesday, Thursday and Friday from 2pm to 5pm.

A Walk-in service is available:

Monday, Tuesday and Thursday between 10am and 4pm

Friday between 10am and 2pm.

The Walk-in and Advisory telephone services are closed on Wednesdays.

Please contact PALS in advance to check if there are any changes to opening times.

PALS is based within the hospital in the ground floor main corridor between Grosvenor and Lanesborough wings.

Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS UK

The NHS provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health. **Web:** www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones. **Tel:** 111

AccessAble

You can download accessibility guides for all our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.



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